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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.       | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------------|------------------|
| 09/821,738  | 03/30/2001  | Ichiro Morishita     | 053933-5008               | 5464             |
| 9629  | 7590        | 12/05/2003           |                           |                  |
| MORGAN LEWIS & BOCKIUS LLP<br>1111 PENNSYLVANIA AVENUE NW<br>WASHINGTON, DC 20004 |             |                      |                           |                  |
|   |             |                      | EXAMINER<br>PATEL, GAUTAM |                  |
|   |             |                      | ART UNIT                  | PAPER NUMBER     |

2655

DATE MAILED: 12/05/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/821,738

Applicant(s)

MORISHITA ET AL.

Examiner

Gautam R. Patel

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 9-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. Claims 1-26 are pending for the examination. Claims 9-26 are withdrawn from further consideration. Action on claims 1-8 follows.

### *Election/Restriction*

2. Claims 9-26 are withdrawn from further consideration by the examiner, 37 C.F.R. § 1.142(b) as being drawn to a non-elected to group other than group I. Election was made **without** traverse in Paper No. 6. Since the Applicants are silent about traverse it is assumed that election was made without traverse.

The Applicants are urged to cancel non-elected claims 9-26.

Applicant is reminded that **upon the cancellation of claims to a non-elected invention, the inventorship must be amended** in compliance with 37 C.F.R. § 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a diligently-filed petition under 37 C.F.R. § 1.48(b) and by the fee required under 37 C.F.R. § 1.17(h).

### *Priority*

3. Receipt is acknowledged of papers submitted under 35 U.S.C. § 119(a)-(d), which papers have been placed of record in the file.

### Drawings/Objection

4. The drawings are objected for following reasons:

Figures 2, 3a and 3b are not designated by a legend such as "Prior Art". The legend is necessary in order to clarify what applicant's invention is (see MPEP § 608.02g).

Correction is required.

Applicant is required to submit a proposed drawing correction in response to this Office Action. Any proposal by the applicant for amendment of the drawings to cure defects must consist of two parts:

1. A separate letter to the Draftsman in accordance with MPEP § 608.02 (r); and,
2. A print or pen-and-ink sketch showing changes in *red ink* in accordance with MPEP § 608.02 (v).

IMPORTANT NOTE: The filing of new formal drawings to correct the noted defect may be deferred until the application is allowed by the examiner, but the print or pen-and-ink sketch with proposed corrections shown in *red ink* is required in response to this Office Action, and may not be deferred.

### **Content of Specification**

5. The disclosure is objected for following reasons:

1. Specification needs to be updated with respect to information on the related applications. Cross-References to Related Applications: See 37 C.F.R. § 1.78 and section 201.11 of the M.P.E.P.

2. The title of the invention is neither precise nor descriptive. A new title is required which should include, using twenty words or fewer, claimed features that differentiate the invention from the Prior Art. It is recommended that the title should reflect the gist of or the improvement of the present invention.

Corrections are required.

***Claim Rejections - 35 U.S.C. § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8 are rejected under 35 U.S.C. § 102(b) as being anticipated by Robinson et al., US. patent 5,973,817 (hereafter Robinson).

As to claim 1, Robinson discloses the invention as claimed [see Figs. 7-18, especially 7-10], a dynamic control diffraction grating and a voltage-dependent phase varying material, comprising:

a voltage-dependent phase varying material [the liquid crystal] for transmitting a beam of light therethrough and varying the phase of the transmitted light beam in response to external voltages applied thereto, said voltages having different levels and being applied to said phase varying material at regular intervals in a comb form [col. 8, line 48 to col. 9, line 16].

7. As to claims 2 and 6, Robinson discloses:  
said voltage-dependent phase varying material is liquid crystal [col. 8, lines 48-58].

8. As to claims 3 and 7, Robinson discloses:  
wherein said voltage-dependent phase varying material is a refractive index varying material for varying said phase of said transmitted light beam with a variation in its refractive index responsive to said first and second voltages [col. 7, line 39 to col. 8, line 2 and col. 8, lines 25-38].

9. As to claims 4 and 8, Robinson discloses:  
said refractive index varying material is lithium niobate [col. 11, lines 42-44].
10. As to claim 5, Robinson discloses:  
a voltage-dependent phase varying material [the liquid crystal] for transmitting a beam of light there through and varying the phase of the transmitted light beam in response to first and second voltages applied thereto;  
a first transparent electrode [fig. 7, unit 13] attached to one inner surface of a flat glass panel for applying said first voltage to said phase varying material, said glass panel containing said phase varying material, said first transparent electrode including a plurality of combs arranged at regular intervals [col. 8, line 48 to col. 9, line 16 and col. 9, lines 35-63]; and  
a second transparent electrode [fig. 7, unit 15] attached to the other inner surface of said glass panel for applying said second voltage to said phase varying material, said second transparent electrode including a plurality of combs arranged at regular intervals [col. 8, line 48 to col. 9, line 16 and col. 9, lines 35-63 and figs. 7-10].  
[col. 8, line 48 to col. 9, line 16]

***Other prior art cited***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
1. Shimano et al. (US. patent 6,278,548) Polarizing diffraction grating
  2. Tombling et al. (US. patent 6,327,013) Liquid crystal device ...
  3. Nakamura (US. patent 6,449,411) Optical wavelength tunable filter
  4. kulishov (US. patent 6,353,690) Electrically adjustable diffraction grating
  5. Lean et al. (US. patent 3,633,996) Two-dimensional acousto-optic deflection system

6. Sato et al. (US. patent 4,115,747) Optical modulation using a controllable diffraction grating
7. Miyawaki (US. patent 4,799,750) Optical function element ...

***Contact information***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gautam R. Patel whose telephone number is (703) 308-7940. The examiner can normally be reached on Monday through Thursday from 7:30 to 6.

The appropriate fax number for the organization (Group 2650) where this application or proceeding is assigned is (703) 872-9314.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Doris To can be reached on (703) 305-4827.

Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 305-4700 or the group Customer Service section whose telephone number is (703) 306-0377.



Gautam R. Patel  
Patent Examiner  
Group Art Unit 2655

December 2, 2003